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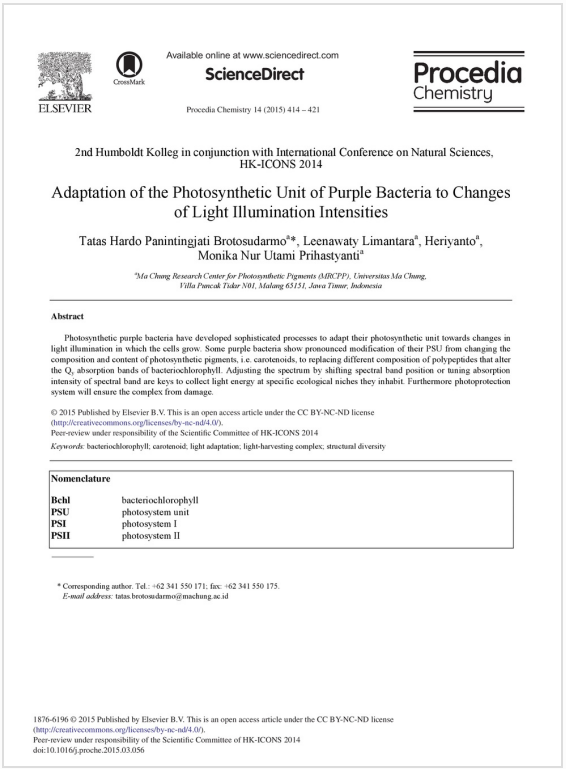

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Adaptation of the Photosynthetic Unit of Purple Bacteria to Changes of Light Illumination Intensities

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Abstract

Photosynthetic purple bacteria have developed sophisticated processes to adapt their photosynthetic unit towards changes in light illumination in which the cells grow. Some purple bacteria show pronounced modification of their PSU from changing the composition and content of photosynthetic pigments, i.e. carotenoids, to replacing different composition of polypeptides that alter the Q_y absorption bands of bacteriochlorophyll. Adjusting the spectrum by shifting spectral band position or tuning absorption intensity of spectral band are keys to collect light energy at specific ecological niches they inhabit. Furthermore photoprotection system will ensure the complex from damage.

Peer-review under responsibility of the Scientific Committee of HK-ICONS 2014

Keywords: bacteriochlorophyll; carotenoid; light adaptation; light-harvesting complex; structural diversity

Nomenclature

Bchl	bacteriochlorophyll
PSU	photosystem unit
PSI	photosystem I
PSII	photosystem II

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